



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,361	04/18/2007	Roy Knechtel	LEO 003 PA	1718
29673	7590	12/04/2009	EXAMINER	
STEVENS & SHOWALTER LLP			GEYER, SCOTT B	
7019 CORPORATE WAY				
DAYTON, OH 45459-4238			ART UNIT	PAPER NUMBER
			2812	
			MAIL DATE	DELIVERY MODE
			12/04/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/580,361	KNECHTEL ET AL.	
	Examiner	Art Unit	
	Scott B. Geyer	2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 02 June 2008.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-22 and 24-29 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-22 and 24-29 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 18 April 2007 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>20060523, 20080602</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The references cited within the IDS documents submitted on May 23, 2006 and June 2, 2008 have been considered.

Drawings

The drawings are objected to because the drawings are informal and have poor reproducibility. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date

of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Applicant note: claims 24, 26, 28 and 29 use the term "specially" while claims 6 and 20 use the term "specific" and "specifically". It is assumed by the examiner that the term should be "specific" or "specifically", however, this may be rendered moot by any potential amendments to the claim(s) in view of the 35 USC 112 second paragraph rejections below. As such, this is not an objection to any of these noted claims. It is only a notice to the applicant that two different terms are used in the claims, and it is the examiner's opinion that "specially" should probably not be used.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-22 and 24-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the following limitations are noted to the applicant:

As to **claim 1**, the claim recites the following limitations: “particularly short front side facet”, “having as low a number of defects as possible” and “wafer surface as large as possible”. The use of these phrases as limitations in the claim renders this claim vague and indefinite.

As to **claim 6**, the claim recites the following limitation: “specifically short front side facet”. The use of this phrase as a limitation in the claim renders this claim vague and indefinite.

As to **claim 11**, the claim recites the following limitation: “having as low a number of defects as possible”. The use of this phrase as a limitation in the claim renders this claim vague and indefinite.

As to **claim 12**, the claim recites the following limitation: “having as low a number of defects as possible”. The use of this phrase as a limitation in the claim renders this claim vague and indefinite.

As to **claim 13**, the claim recites the following limitation: “having as low a number of defects as possible”. The use of this phrase as a limitation in the claim renders this claim vague and indefinite.

As to **claim 20**, the claim recites the following limitations: “having a specific short front side facet”, “being as devoid of defects as possible” and “wafer surface as large as possible”. The use of these phrases as limitations in the claim renders this claim vague and indefinite.

As to **claim 24**, the claim recites the following limitations: “having a specially short front side facet”, “being as devoid of defects as possible” and “wafer surface that

is as large as possible". The use of these phrases as limitations in the claim renders this claim vague and indefinite.

As to **claim 26**, the claim recites the limitations: "having a specially short front side facet" and "wafer surface that is as large as possible". The use of these phrases as limitations in the claim renders this claim vague and indefinite.

As to **claim 28**, the claim recites the limitation: "specially shorter facets". The use of this phrase as a limitation in the claim renders this claim vague and indefinite.

As to **claim 29**, the claim recites the limitation: "specially shorter facets". The use of this phrase as a limitation in the claim renders this claim vague and indefinite.

For all of the above noted limitations, the claims offer no quantifying data for these limitations. Therefore, the metes and bounds of these limitations cannot be ascertained. Accordingly, these claims are rendered indefinite. In addition, for at least independent claims 1, 20, 24 and 26, all of the dependent claims are also rejected as they depend from these claims and thus also contain these indefinite limitations.

For example, the limitation "having as low a number of defects as possible" is indefinite because the claim does not give any range as to what is an acceptable level of defects. The defect level could be zero, or it could have any number of defects and still function in some way. The applicant has not defined any level, so it is interpreted by the examiner as meaning any prior art with two wafers bonded together with any possible defect level is what meets the limitation of the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 20, 24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Abe et al. (6,583,029 B2).

As to claims 1, 20, 24 and 26, Abe et al. teach two wafers bonded together and a method of performing such bonding. The wafers have edge geometries that are faceted. After bonding of the two wafers, a subsequent separation operation is performed. See figures 1-3.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, including wafer bonding, thinning, wafer diameters and reducing defects (voids): Morrow et al. (7,129,172 B2); Yanagita et al. (6,653,206 B2); Kwon et al. (6,627,519 B2); Fonstad, Jr. et al. (6,455,398 B1); Yamagata et al. (5,980,633); Ito et al. (5,232,870); Black et al. (4,939,101).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott B. Geyer whose telephone number is (571)272-1958. The examiner can normally be reached on weekdays, between 9:30am and

4:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles D. Garber can be reached on (571)272-2194. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Scott B Geyer/
Primary Examiner, Art Unit 2812